

Application No.: 10/053396

Case No.: 56313US009

**REMARKS**

Reconsideration of the application is requested.

**Status of Claims**

Claims 2-8 and 10-13 are pending. Claims 1, 9 and 14-17 have been canceled; this amendment is made without prejudice. Claims 2-8, 10-13 are amended. No new claims have been added.

Claims 2, 3, 5, 6, and 8 are amended to add serial commas and in the case of claim 3 a missing "and". Claims 12 and 13 have been amended to be in independent form. Claims 2-8, 10 and 11 have been amended to depend from claim 12.

**§102 Rejections**

Claims 1-17 stand rejected under 35 USC § 102(b) as anticipated by Kistner et al. in view of the Polymer Science Dictionary.

Kistner describes a process of rejuvenating a silicone-containing organic polymeric surface with a fluorinated silane of the following formula (I):



The silane of formula (I) is not an oligomer and does not have pendant groups.

In the Office Action, it is asserted (with citations to columns 6 and 8 of the reference) that the fluorochemical compound in formula (I) may be a fluorochemical oligomer having pendant groups. However, formula (I) clearly is not a oligomer and does not have repeating and pendant groups. Specific examples of compounds (I) are described in columns 7 and 8 and none of them is oligomeric in nature. Kistner does disclose compounds that are oligomers with pendant groups, however, these are examples of substrate materials which can be rejuvenated by the fluorinated silanes of formula (I). Indeed, these fluorosilane containing low-energy coatings, which become spent during use, include polymeric compounds comprising pendant fluoroaliphatic groups and pendant groups reacted with epoxy silanes (column 8, lines 61-67). Such polymers are described in formulas (II) and (III), but not in formula (I). The polymers in formula (II) and (III) contain organic functional groups capable of reacting with an epoxy silane

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(see column 9, lines 5-7 and lines 32-35). These polymers do not contain silyl groups themselves.

According to Kistner, the substrate is treated as follows (see column 16, lines 38-61): first the substrate is treated with a primer (column 16, lines 30-37) and UV-cured, then coated with the durable, low energy surface polymer (see column 16, line 16-23) and UV-cured again. It is very clear (see column 16, lines 16-23) that the fluorochemical polymer is mixed with epoxysilane and UV-initiator; thus the polymer does not contain the silane groups yet, before the coating is made and UV curing is done. It is clear that the polymers (II) and (III) do not contain silane groups by themselves, as is also clear from their preparation (see column 15, line 55, through column 16, line 16).

In contrast, the compounds claimed in the instant application always contain silyl groups in monomer M<sub>n</sub> and/or group G, so are clearly different from compounds (II) and (III) from Kistner.

Kistner merely mentions that the fluorochemical silanes of formula (I) can be used as rejuvenating agents, but is silent on the mechanical durability of those compounds. An advantage of the present invention is that the distinct compounds claimed here provide durable, abrasion resistant oil and water repellency.

In the instant invention, the compositions preferably use fluorochemical units containing C<sub>4</sub>F<sub>9</sub>-units (see claim 4), whereas Kistner is using C<sub>6</sub>F<sub>13</sub> or C<sub>8</sub>F<sub>17</sub>-units (claim 3). It is known that C<sub>8</sub>F<sub>17</sub> groups tend to bioaccumulate in living organisms and therefore not considered suitable for use in sustainable coatings. It is also generally believed that the surface energy of C<sub>4</sub>F<sub>9</sub> groups is higher (i.e., is less repellent) than that of otherwise similar materials made with C<sub>8</sub>F<sub>17</sub> groups, therefore it is quite surprising that compositions of our claim 1 give excellent repellent properties, as shown in the examples.

Claims 14-17 were rejected under 35 USC § 102(b) as anticipated by Dams. This rejection is rendered moot in view of the cancellation of claims 14-17.

Claims 1-11 and 14 were rejected under 35 USC § 102(b) as anticipated by Kuwamura. This rejection is rendered moot in view of the amendments above.

For the reasons discussed above, Applicant respectfully submits that the rejections under 35 USC § 102 have been overcome and should be withdrawn.

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**Double Patenting**

Claim 1 was rejected for obviousness-type double patenting over claim 7 of U.S. Patent No. 6,649,272. Claim 17 was provisionally rejected for obviousness-type double patenting over claim 1 of copending U.S. Application No. 10/053,001. Claim 1 was provisionally rejected for obviousness-type double patenting over claim 4 of copending U.S. Application No. 10/745,003.

The cancellation of claims 1 and 17 renders these double patenting rejections moot.

**CONCLUSION**

In view of the above, it is submitted that the application is in condition for allowance. Allowance of claims 2-8 and 10-13, as amended, at an early date is solicited.

Respectfully submitted,

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